

REMARKS/ARGUMENTS

Reconsideration and allowance in view of the foregoing amendment and the following remarks are respectfully requested.

Claims 1-8 are now pending.

The title of the invention was objected to as not being descriptive. The title has been amended so as to be more descriptive of the claimed invention. If the Examiner would prefer another title, it is respectfully requested that it be suggested in the next Official action.

The Examiner noted that the Japanese document listed in the Information Disclosure Statement filed September 12, 2003 had not been considered because it did not include a concise explanation of relevance. It is respectfully noted that the U.S. Patent cited in the same Information Disclosure Statement (USP 5,254,954) is the English language counterpart to the cited Japanese Document 2550790 as indicated in the Information Disclosure Statement. Therefore, on information and belief, applicant has effectively submitted a translation of the cited Japanese document for the Examiner's consideration. As the Japanese publication is cumulative to the cited '954 Patent, which the Examiner has considered, it is believed that no further submission or documentation is required.

Original claim 1 was rejected under 35 USC 102(b) as being anticipated by Whaley. Applicant respectfully traverses this rejection.

Anticipation under Section 102 of the Patent Act requires that a prior art reference disclose every claim element of the claimed invention. See, e.g., Orthokinetics, Inc. v. Safety Travel Chairs, Inc., 806 F.2d 1565, 1574 (Fed. Cir. 1986). While other references may be used to interpret an allegedly anticipating reference, anticipation must be found in a single reference. See, e.g., Studiengesellschaft Kohle, G.m.b.H. v. Dart Indus., Inc., 726 F.2d 724, 726-27 (Fed. Cir. 1984). The absence of

any element of the claim from the cited reference negates anticipation. See, e.g., Structural Rubber Prods. Co. v. Park Rubber Co., 749 F.2d 707, 715 (Fed. Cir. 1984). Anticipation is not shown even if the differences between the claims and the prior art reference are insubstantial and the missing elements could be supplied by the knowledge of one skilled in the art. See, e.g., Structural Rubber Prods., 749 F.2d at 716-17.

In the prior art, testing of the insulator of a spark plug has been performed after the spark plug is assembled. To perform this testing, a high voltage must be applied to the center electrode of the spark plug. In order to ensure that a sufficiently high level of test voltage can be applied before an arc occurs in the spark gap, two basic methods have been used in the prior art. The first is to immerse the lower end of the spark plug, that is the metal elements constituting the spark gap, in oil. This so-called oil quench method is described for example in Whaley at column 1, lines 19-31. The second is to seal the lower end of the spark plug in a chamber which is then raised to a high pressure. The latter method is referred to as "compressed air quench". In both these prior art methods, most of all of the insulator of the spark plug remains outside the oil bath or compressed air chamber, at atmospheric pressure. The later method is specifically described by Whaley in column 1, lines 65-71 to wit: "The spark plug 2 being tested has its lower or sparking end inserted and sealed tight into a metal air pressure chamber 18...".

It is respectfully submitted that the above mentioned prior art methods of spark plug testing have no relationship to the present invention. In this regard, the invention does not relate to testing of completed spark plugs, but is concerned only with testing the insulators of spark plugs, which can be performed before assembly of the spark plugs is completed. This is done by enclosing each insulator within a sealed chamber which is then raised to a high pressure, whereupon the testing of the insulator(s) is performed. Thus, claim 1 includes the recited steps of "placing the insulator inside a pressure-proof chamber" (emphasis added) and "filling the pressure-proof chamber

with a air under a pressure that is higher than atmospheric pressure". In this respect, original claim 1 does not merely recite inserting the insulator in a pressure-proof chamber but instead recites placing the insulator inside a chamber.

Thus, Whaley does not anticipate the foregoing essential features of claim 1 of the present invention, because only the sparking end of the spark plug is inserted and sealed in the pressure chamber. Because Whaley teaches only inserting a tip of a spark plug in a pressure-proof chamber there is no anticipation of the recited placing the insulator inside a chamber. If the Examiner believes that this originally claimed feature of the invention should be made more explicit by adding (by Examiner's Amendment) "the entire" before insulator, it is respectfully requested that such be proposed before further Action.

In view of the foregoing, it is respectfully submitted that claim 1 is not anticipated by Whaley.

Claims 2 and 3 were rejected under 35 USC 102(a) as being anticipated by Kravis. Applicant respectfully traverses this rejection.

The Examiner asserts that Kravis describes "measuring a level of leakage current that flows between the first and second electrodes" as required by claims 2 and 3 and asserts that Kravis describes this in column 4, lines 5-10 and lines 15-28. Applicant respectfully disagrees with the Examiner's characterization of Kravis and rejection of claims 2 and 3 based thereon. First, the noted portions of the Kravis disclosure are concerned with a method of testing spark plugs (and the associated ignition system) by monitoring an energy signal that is produced when the spark plug is driven to produce a spark, i.e., by comparing the form of a captured energy signal with that of a predetermined signal, when a spark is actually produced, or detecting that no spark has occurred (i.e., no energy signal has been produced). As would be appreciated by the skilled artisan, it would clearly impossible to use such a technique to measure a level of leakage current that flows between such electrodes. Instead, as described as column

4, lines 15-28 of Kravis, that method is used to determine whether a spark plug (or the associated ignition system) has a defect such as an open-circuit ignition coil, electrically open contact spring, an electrically shorted pair of electrodes, etc. Thus, even if the inner and outer electrodes of an assembled spark plug were interpreted as corresponding to the first and second electrodes recited in claims 2 and 3, Kravis does not teach or in any way suggest the methods of spark plug insulator testing set out in these claims, including measuring a level of leakage current which flows between said first and second electrodes and judging whether there is a defect in the insulator based on a level of leakage current exceeding a predetermined value. It is therefore respectfully submitted that claims 2 and 3 are not anticipated by nor obvious from Kravis.

Claim 4 was rejected under 35 USC 103(a) as being unpatentable over Whaley in view of Kravis. Applicant respectfully traverses this rejection.

Claim 4 is submitted to be patentable over Whaley at least by virtue of its dependence on claim 1, which is distinguishable from Whaley for the reasons noted above. The Examiner's further reliance on Kravis does not overcome the deficiencies of Whaley noted above. It is therefore respectfully submitted that claim 4 is also allowable over the applied art.

Applicant notes with appreciation the Examiner's indication that claim 7 contains allowable subject matter. Claim 7 has been presented in independent form above so that it should now be allowed. Applicant also notes with appreciation the Examiner's indication that claim 5 and claim 6 dependent thereon contain allowable subject matter.

All objections and rejections having been addressed, it is respectfully submitted that the present application is in condition for allowance and an early Notice to that effect is earnestly solicited.

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Respectfully submitted,

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